

CLAIMS:

1. An expression editor comprising:
an expression tree representing an expression in prefix notation, the expression including a plurality of operators and operands; and
a plurality of infix operators corresponding with the plurality of operators inserted into the prefix expression tree, wherein the plurality of operands and infix operators represent the expression in infix notation.
2. The expression editor of claim 1, wherein the plurality of operators are represented symbolically.
3. The expression editor of claim 2, wherein the plurality of infix operators are represented textually.
4. The expression editor of claim 1, wherein the expression tree comprises:
a prefix tree side containing the operators and the tree structure, and
an infix/prefix hybrid side containing the operands and the infix operators,
wherein the prefix tree side is to the left of an invisible line and the infix/prefix hybrid side is to the right of the invisible line.
5. The expression editor of claim 1, wherein each operator of the expression tree has a corresponding expansion box that is operable by a user to show or hide the operands of the corresponding operator.

6. The expression editor of claim 1, wherein the expression comprises a Boolean expression, the operators comprise Boolean operators, and the expression tree comprises a Boolean expression tree.
7. The expression editor of claim 6, wherein the Boolean expression comprises a rule in a network security system.
8. The expression editor of claim 7, wherein the expression editor comprises a rule editor of the network security system.
9. The expression editor of claim 1, wherein the plurality of operands and infix operators represent the expression in infix notation when read left-to-right and top-to-bottom.
10. The expression editor of claim 1, wherein the infix operators include parentheses to indicate the order of operations implicit in the expression tree.
11. The expression editor of claim 1, wherein an insertion or deletion of an operator is reflected by a change in the corresponding infix operator.
12. The expression editor of claim 1, wherein an insertion or deletion of parentheses indicating an order of operations for the infix notation of the expression is reflected by a

change in the structure of the expression tree to implicitly represent the changed order of operations.

13. A method of displaying an expression being capable of representation in infix and prefix notation, and comprising a plurality of operators and operands, the method comprising:

displaying the expression as a prefix expression tree, wherein the plurality of operands comprise the leaves of the expression tree; and

inserting a plurality of infix operators corresponding with the plurality of operators into the prefix expression tree, wherein, the plurality of operands and infix operators represent the expression in infix notation.

14. The method of claim 13, wherein the plurality of operators are displayed symbolically.

15. The method of claim 14, wherein the plurality of infix operators are displayed textually.

16. The method of claim 13, wherein the expression tree is displayed as having:
a prefix tree side containing the operators and the tree structure, and
an infix/prefix hybrid side containing the operands and the infix operators,
wherein the prefix tree side is to the left of an invisible line and the infix/prefix hybrid side is to the right of the invisible line.

17. The method of claim 16, wherein inserting the plurality of infix operators comprises inserting an open parenthesis to correspond with each operator, the open parentheses being displayed on the same horizontal line on the infix/prefix hybrid side as the operator occupies on the prefix tree side.

18. The method of claim 16, wherein inserting the plurality of infix operators comprises inserting an infix operator on the infix/prefix hybrid side corresponding with each operator on the prefix tree side in front of all operands except the first operand of each operator.

19. The method of claim 16, further comprising updating the prefix tree side to show corresponding changes on the infix/prefix hybrid side.

20. The method of claim 16, further comprising updating the infix/prefix hybrid side to show corresponding changes on the prefix tree side.

21. The method of claim 13, wherein the expression comprises a Boolean expression, the operators comprise Boolean operators, and the expression tree comprises a Boolean expression tree.

22. The method of claim 21, wherein the Boolean expression comprises a rule in a network security system.

23. A network security system comprising:
- a plurality of software agents to collect security events from a plurality of monitor devices;
 - a manager including a rules engine to correlate the collected security events according to a set of rules; and
 - a console interface to edit a rule from the set of rules using a graphical user interface, the graphical user interface comprising a Boolean expression tree to represent the rule in prefix notation, the rule including a plurality of operators and operands, and a plurality of infix operators corresponding with the plurality of operators inserted into the Boolean expression tree, wherein the plurality of operands and infix operators represent the rule in infix notation.